Comparisons of Job Characteristics

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)

Compare Knowledge
Compare Skills
Compare Abilities
Compare Detailed Work Activities
Compare Tools and Technologies

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

Knowledge

Similarity of Focus Occupation to Associated Occupation: 72

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Engineering and Technology	5.7	20.6	12.0	<<	Extensive education and/or training may be required
Design	5.2	16.6	7.3	<<	Extensive education and/or training may be required
Mathematics	9.2	15.3	14.8	0	Current knowledge level may be sufficient
Production and Processing	6.0	12.6	7.0	<<	Extensive education and/or training may be required
Law and Government	5.9	12.5	7.3	<<	Extensive education and/or training may be required
Physics	4.3	11.4	11.2	0	Current knowledge level may be sufficient
Public Safety and Security	6.9	10.9	7.1	<<	Extensive education and/or training may be required
Building and Construction	4.0	10.7	4.5	<<	Extensive education and/or training may be required
Chemistry	4.8	10.2	10.7	0	Current knowledge level may be sufficient
Geography	3.9	10.2	11.6	>	Current knowledge level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Skills

Similarity of Focus Occupation to Associated Occupation: 70

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation

Judgment and Decision Making	9.4	15.1	8.9	<<	Extensive development of skills in this area may be required
Complex Problem Solving	9.1	14.8	8.6	<<	Extensive development of skills in this area may be required
Mathematics	6.2	13.9	7.8	<<	Extensive development of skills in this area may be required
Monitoring	9.9	13.9	9.4	<<	Extensive development of skills in this area may be required
Systems Analysis	6.5	13.0	7.0	<<	Extensive development of skills in this area may be required
Systems Evaluation	6.4	12.7	6.2	<<	Extensive development of skills in this area may be required
Operations Analysis	5.0	11.5	4.8	<<	Extensive development of skills in this area may be required
Management of Financial Resources	3.3	9.8	2.6	<<	Extensive development of skills in this area may be required
Management of Material Resources	3.7	9.7	4.1	<<	Extensive development of skills in this area may be required
Programming	2.2	8.3	2.9	<<	Extensive development of skills in this area may be required
Technology Design	2.6	7.3	2.6	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Abilities

Similarity of Focus Occupation to Associated Occupation: 93

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)

Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Oral Comprehension	12.5	16.3	12.6	<<	Extensive improvement in abilities may be required
Written Comprehension	11.0	15.7	13.0	<	Some improvement in abilities may be required
Deductive Reasoning	10.6	15.5	10.4	<<	Extensive improvement in abilities may be required
Written Expression	9.8	15.1	10.7	<<	Extensive improvement in abilities may be required
Problem Sensitivity	11.1	14.8	10.3	<<	Extensive improvement in abilities may be required
Information Ordering	9.9	14.4	10.7	<<	Extensive improvement in abilities may be required
Inductive Reasoning	10.2	14.1	10.7	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	13.8	10.3	<<	Extensive improvement in abilities may be required
Mathematical Reasoning	6.3	12.8	8.4	<<	Extensive improvement in abilities may be required
Visualization	7.5	12.4	8.4	<<	Extensive improvement in abilities may be required
Flexibility of Closure	7.8	12.2	9.9	<	Some improvement in abilities may be required

Fluency of Ideas	7.6	11.8	6.8	<<	Extensive improvement in abilities may be required
Speed of Closure	5.9	8.7	5.1	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 79

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)

Work Activities	Exclusivity of Activity
Adhere to safety procedures	12
Analyze geological research data	87
Analyze scientific research data or investigative findings	27
Analyze technical data, designs, or preliminary specifications	47
Collect scientific or technical data	30
Communicate technical information	4
Compile numerical or statistical data	38
Conduct standardized qualitative laboratory analyses	62
Conduct standardized quantitative laboratory analyses	62
Develop or maintain databases	30
Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Examine engineering documents for completeness or accuracy	62
Explain complex mathematical information	30
Follow safe waste disposal procedures	50
Perform safety inspections in construction or resource extraction setting	46
Prepare reports	8
Prepare safety reports	60
Read technical drawings	7
Understand engineering data or reports	48
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use knowledge of materials testing procedures	70
Use mathematical or statistical methods to identify or analyze problems	30
Use physical science research techniques	68
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.

Tools and Technologies that Both Occupations Have in Common

Similarity of Focus Occupation to Associated Occupation: 88

Focus Occupation: Geological and Petroleum Technicians (19-4041)
Associated Occupation: Mining and Geological Engineers, Including Mining Safety Engineers (17-2151)

Tools and Technologies	Exclusivity
Audio and visual equipment	4
Business function specific software	1
Calculating machines and accessories	3
Computer data input devices	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Forming tools	2
Geophysical and geotechnical instruments	23
Industry specific software	1
Measuring and layout tools	3
Rock and strata measuring equipment	47

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O*NET (Occupation Information Network) data.